We claim:

1. A method to compensate for a step DC disturbance in a digital baseband signal in a homodyne radio receiver, comprising the following steps:

a) determining a time Tst at which the step DC disturbance occurs within a burst;

b) calculating various time profiles of the step DC disturbance for two or more times around Tst;

c) calculating these profiles from the digital baseband signal in order to produce the various step-corrected baseband signal versions;

d) evaluating the various step-corrected baseband signal versions which are obtained in this way, on the basis of a predetermined criterion; and

e) selecting one of the step-corrected baseband signal versions as a function of the evaluation result.

2. The method as claimed in Claim 1, wherein the following additional step is carried out before step b):

- estimating the magnitude of the step DC disturbance by separate evaluation of the baseband signal at the times before and after Tst;

wherein the calculation process in step b) takes the estimated magnitude of the step DC disturbance into account; and wherein the calculation in step c) is carried out by subtracting the calculated time profiles from the digital baseband signal, in order to produce the various step-corrected baseband signal versions.

3. The method as claimed in Claim 1, further comprising the steps of:

- predetermining first time intervals with a specific interval length at the start and/or at the end of the burst, and
- carrying out the correction for the step DC disturbance only when Tst is outside this first time interval.

4. The method as claimed in Claim 1, wherein when Tst is within a second time interval in the burst, the step-corrected baseband signal is produced by means of various time profiles.

5. The method as claimed in Claim 4, wherein
- the second time interval is a time interval in which the training sequence occurs,
- the various step-corrected baseband signal versions are correlated with the training sequence which is known in the receiver, and
- that step-corrected baseband signal version which has the best correlation result is selected as the step-corrected baseband signal.

6. The method as claimed in Claim 2, wherein
- the magnitude of the step DC disturbance is calculated taking into account a guard time interval around the determined time Tst, with the baseband signal within the guard time interval being ignored in the estimate of the magnitude of the DC disturbance.

7. The method as claimed in Claim 1, wherein
- the time profile or the time profiles of the step DC disturbance is/are calculated on the basis of a first step model in which a sudden rise occurs in the step flank for a specific data symbol in the digital baseband signal.

8. The method as claimed in Claim 1, wherein
- the time profile or the time profiles of the step DC disturbance is/are calculated on the basis of a second step model, in which the step flank rises as a ramp function over a time period of two or more data symbols in the digital baseband signal.

9. A method to compensate for a step DC disturbance in a digital baseband signal in a homodyne radio receiver, comprising the following steps:

a) determining a time Tst at which the step DC disturbance occurs within a burst;

b) evaluating the position of the Tst within the burst being considered;

c) deciding on the basis of the position of Tst and/or on the basis of which calculation rule whether the production of a step-corrected baseband signal should be carried out; and

if a step-corrected baseband signal is to be generated,

d) calculating the time profile of the step DC disturbance and calculating this profile from the digital baseband signal in order to produce the step-corrected baseband signal as a function of the calculation rule which was selected in step c).

10. The method as claimed in Claim 9, wherein step d) includes the following steps:

d1) estimating the magnitude of the step DC disturbance by separate evaluation of the baseband signal at the times before and after Tst;

d2) calculating a time profile of the step DC disturbance taking into account the determined time Tst and the estimated magnitude of the step DC disturbance; and

d3) subtracting the calculated time profile of the step DC disturbance from the digital baseband signal, in order to produce the step-corrected baseband signal.

11. The method as claimed in Claim 9, further comprising the steps of:

- predetermining first time intervals with a specific interval length at the start and/or at the end of the burst, and
- carrying out the correction for the step DC disturbance only when Tst is outside this first time interval.

12. The method as claimed in Claim 9, wherein when Tst is within a second time interval in the burst, the step-corrected baseband signal is produced by means of various time profiles.

13. The method as claimed in Claim 12, wherein
- the second time interval is a time interval in which the training sequence occurs,
- the various step-corrected baseband signal versions are correlated with the training sequence which is known in the receiver, and
- that step-corrected baseband signal version which has the best correlation result is selected as the step-corrected baseband signal.

14. The method as claimed in Claim 10, wherein
- the magnitude of the step DC disturbance is calculated taking into account a guard time interval around the determined time Tst, with the baseband signal within the guard time interval being ignored in the estimate of the magnitude of the DC disturbance.

15. The method as claimed in Claim 9, wherein
- the time profile or the time profiles of the step DC disturbance is/are calculated on the basis of a first step model in which a sudden rise occurs in the step flank for a specific data symbol in the digital baseband signal.

16. The method as claimed in Claim 9, wherein
- the time profile or the time profiles of the step DC disturbance is/are calculated on the basis of a second step model, in which the step flank rises as a ramp function over a time period of two or more data symbols in the digital baseband signal.